

WHAT IS CLAIMED IS:

1. A process for preparing a liquid concentrate for use in the manufacture of plastic parts comprising:

(a) preparing one or more liquid intermediates, wherein the liquid intermediates comprise a liquid vehicle and at least one additive;

(b) standardizing the liquid intermediates;

(c) transferring the standardized liquid intermediates to a remote location; and

(d) dispensing the liquid intermediates to produce a liquid concentrate, wherein the quantity of each liquid intermediate dispensed is controlled according to a predetermined formula for the liquid concentrate.

2. The process according to claim 1, wherein the quantity of each liquid intermediate dispensed is controlled by a computer that contains the predetermined formula.

3. The process according to claim 2, wherein the formula is gravimetric.

4. The process according to claim 3, wherein the gravimetric formula is inputted into the computer locally.

5. The process according to claim 3, wherein the gravimetric formula is inputted into the computer remotely.

6. The process according to claim 1, wherein the additive is selected from the group consisting of a colorant, an optical brightener, a laser marking additive, an anti-settling agent, a blowing agent, a release agent, a light stabilizer, and mixtures thereof.

7. The process according to claim 2, wherein the dispensing of the liquid intermediates in step (d) is controlled by a computer.

8. The process according to claim 7, wherein at least one of the liquid intermediates is agitated after step (c) and before step (d).

9. The process according to claim 8, wherein the liquid intermediate is agitated by recirculating the intermediate.

10. The process according to claim 9, wherein the recirculation of the liquid intermediate is computer controlled.

11. The process according to claim 7, wherein the liquid intermediates are dispensed in order of heaviest intermediate on a weight basis to smallest intermediate on a weight basis.

12. The process according to claim 7, wherein the formula is prepared prior to step (d) based on additive requirements received from the user of the liquid concentrate.

13. A process for preparing a liquid concentrate for use in the manufacture of plastic parts comprising:

(a) providing one or more liquid intermediates, wherein the liquid intermediates comprise a liquid vehicle and at least one additive, wherein the liquid intermediates are standardized, and wherein the liquid intermediates have been prepared remotely; and

(b) dispensing the liquid intermediates to produce a liquid concentrate, wherein the quantity of each liquid intermediate dispensed is controlled according to a predetermined formula for the liquid concentrate.

14. The process according to claim 13, wherein the quantity of each liquid intermediate is controlled by a computer that contains the predetermined formula.

15. The process according to claim 14, wherein the formula is gravimetric.

16. The process according to claim 15, wherein the gravimetric formula is inputted into the computer locally.

17. The process according to claim 15, wherein the gravimetric formula is inputted into the computer remotely.

18. The process according to claim 1, wherein the additive is selected from the group consisting of a colorant, an optical brightener, a laser-marking additive, an anti-settling agent, a blowing agent, a release agent, a light stabilizer, and mixtures thereof.

5 19. The process according to claim 13, wherein the dispensing of the liquid intermediates in step (b) is controlled by a computer.

20. The process according to claim 19, wherein at least one of the liquid intermediates is agitated after step (a) and before step (b).

10 21. The process according to claim 20, wherein the liquid intermediate is agitated by recirculating the liquid intermediate.

15 22. The process according to claim 21, wherein the recirculation of the liquid intermediate is controlled by a computer.

23. The process according to claim 19, wherein the liquid intermediates are dispensed in order of heaviest liquid intermediate on a weight basis to smallest liquid intermediate on a weight basis.

20 24. The process according to claim 13, wherein the formula is prepared prior to step (b) based on additive requirements received from the user of the liquid concentrate or determined as part of the formula development process.

25 25. A process for preparing a liquid concentrate for use in the manufacture of plastic parts comprising:

30 (a) providing a plurality of standardized liquid intermediates comprising one or more liquid additive intermediates and one or more liquid color intermediates, wherein the liquid intermediates comprise a liquid vehicle and at least one colorant, wherein the tint strength, color hue and viscosity of each liquid color intermediate is standardized, and wherein the liquid intermediates have been prepared remotely; and

35 (b) dispensing the liquid intermediates to produce a liquid concentrate, wherein the quantity of each liquid intermediate dispensed is controlled according to a predetermined gravimetric formula for the liquid concentrate, wherein the quantity of each liquid

intermediate is controlled by a computer that contains the predetermined gravimetric formula, and wherein the dispensing of the liquid intermediates is controlled by the computer.

26. A dispensing system to prepare a liquid concentrate for use in the manufacture of plastic parts comprising:

(a) a plurality of containers each containing a standardized liquid intermediate prepared at a location remote from the dispensing system; and

10 (b) a dispensing machine for dispensing a plurality of liquid intermediates to produce a liquid concentrate, wherein the quantity of each liquid intermediate dispensed is controlled according to a predetermined gravimetric formula for the liquid concentrate, wherein the quantity of each liquid intermediate is controlled by a computer that contains the predetermined gravimetric formula, and wherein the dispensing of the liquid intermediates is controlled by the computer.

27. The dispensing system according to claim 28, wherein the predetermined gravimetric formula for the liquid concentrate is selected by the operator of the dispensing machine from a formula library stored in the computer.

28. An automated dispensing system for preparing a liquid concentrate for use in the manufacture of plastic parts comprising:

(a) a plurality of containers each containing a standardized liquid intermediate prepared at a location remote from the dispensing system;

(b) a computer for selecting a predetermined gravimetric formula for a desired liquid concentrate; and

30 (c) a dispensing machine for dispensing a plurality of liquid intermediates to produce the desired liquid concentrate, wherein the quantity of each liquid intermediate is controlled by a computer that contains the predetermined gravimetric formula, and wherein the dispensing of the liquid intermediates is controlled by the computer.

35 29. The dispensing system according to claim 28, wherein the predetermined gravimetric formula for the liquid concentrate is selected by the operator of the dispensing machine from a concentrate formula library stored in the computer.

30. The dispensing system according to claim 29, wherein the gravimetric formula for the liquid concentrate is generated by an operator using one or more of the liquid intermediates identified in an intermediate library stored in the computer.

5 31. The dispensing system according to claim 30, wherein the computer further tracks the inventory of liquid intermediates dispensed, and determines if a sufficient quantity of each liquid intermediate in the predetermined gravimetric formula is available for dispensing pursuant to step (c).

10 32. The dispensing system according to claim 31, wherein the computer further bills the user for the liquid concentrates dispensed automatically at specified intervals.

15 33. An automated process for preparing a liquid concentrate for use in the manufacture of plastic parts comprising:

(a) providing a plurality of liquid intermediates, wherein the liquid color intermediates comprise a liquid vehicle and at least one colorant, wherein the tint strength, color hue and viscosity of each liquid color intermediate is standardized, and wherein the liquid color intermediates have been prepared remotely;

20 (b) selecting a liquid concentrate having a predetermined gravimetric formula comprising one or more liquid intermediates from a concentrate formula library stored in a computer; and

25 (c) dispensing the plurality of standardized liquid intermediates liquid according to the predetermined gravimetric formula for the liquid concentrate, where the dispensing of the liquid intermediates is controlled by computer.

30 (b): 34. The automated process according to claim 33, further comprising before step

(i) preparing an intermediate library identifying each of the plurality of standardized liquid intermediates, wherein the intermediate library is stored in the computer; and

35 (ii) preparing a concentrate formula library of one or more liquid concentrates, wherein the concentrate formula library is prepared using one or more of the liquid

intermediates identified in the intermediate library, wherein a predetermined gravimetric formula for each liquid concentrate is stored in the computer.

35. The automated process according to claim 34, further comprising:

(d) tracking the inventory of liquid intermediates dispensed.

36. The automated process according to claim 35, further comprising before step (c):

(i) checking the inventory of liquid intermediates to determine if a sufficient quantity of each liquid intermediate in the predetermined gravimetric formula is available for dispensing pursuant to step (c).